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CALFED INQUIRY SUBMITTAL
July 28, 1997

a. **Project Title and Applicant Name.** Wetland Restoration at the Southern End of Mare Island, Vallejo, California. Submitted by Tetra Tech EM Inc., in association with the U.S. Navy, Engineering Field Activity West (EFA WEST).

b. **Project Description and Primary Biological/Ecological Objectives.** The project will restore approximately 35 acres of man-made land at the southern end of Mare Island, Vallejo, California (Figures 1 and 2) to an intertidal salt marsh and emergent wetlands habitat. This area was originally created as sediment accrued behind a dike constructed in 1907, supplemented by additional fill. The land was historically used for munitions storage and disposal, and has recently been disturbed by ordnance removal activities; it is currently barren soil. Restoration of the area to a wetland will enhance water quality in Carquinez Strait and will provide a priority habitat for endangered species, including the salt marsh harvest mouse (*Reithrodontomys raviventris*) and the California clapper rail (*Rallus longirostris obsoletus*), and candidate species for Federal listing, including the California black rail (*Lateralus Jamaicensis coturniculus*), common yellow throat (*Geothlypsis trichas sinuosa*), and Suisun shrew (*Sorex oranatus sinuosus*). Other species that will inhabit the marsh include sandpipers, ducks, terns, herons, egrets, and owls. In general, the focus of the project will be on reestablishing the functions and values of wetlands that previously existed in the intertidal areas of Mare Island.

c. **Approach/Tasks/Schedule.** The approach that will be employed for wetland restoration at Mare Island will first be presented in a restoration plan for the site. Implementation of the plan will be accomplished by reestablishing the hydrologic regime, revegetating the area, and monitoring project effectiveness over time. These tasks are described below. **Total anticipated project duration: 6.5 years.**

Task 1. Develop a Wetland Restoration Plan. A wetland restoration plan will be prepared for the project that provides a detailed description of the objectives of the restoration, rationale for the selected approach, tasks to be completed, field methods to be used, and associated quality control procedures. **Task duration: 6 months.**

Task 2. Reestablish the Hydrologic Regime and Physical Habitat Features of the Wetland. Although various alternative approaches will be considered during development of the restoration plan, it is anticipated that the preferred approach to restoring the hydrologic regime at the site will entail regrading and excavation of channels to facilitate tidal flushing and increase hydrologic capacity. **Task duration: 6 months.**

Task 3. Revegatate to Restore Wetland. The site will be revegetated by transplanting native salt marsh plants from unimpacted areas of the site, nearby wetlands, or local nurseries. Plants selected for revegetation of the intertidal salt marsh will be identified in the restoration plan based on hydrosoil characteristics such as redox and pH, as well as on the water quality characteristics of the tides, which will directly affect the wetland (for example, suspended solids and biochemical oxygen demand). **Task duration: 6 months.**

Task 4. Monitor Wetland Stability. The effectiveness of the wetland restoration project will be monitored by conducting an initial, baseline ecological survey of the area at the conclusion of construction, followed by annual surveys over a 5-year period. **Task duration: 5 years.**

d. **Justification for Project and Funding by CALFED.** We believe this project would assist CALFED in meeting their goals related to enhancing the ecological and biological conditions of the Bay-Delta system. In particular, this project would restore tidal marsh habitat that is likely to be occupied by endangered species, including the salt marsh harvest mouse and the California clapper rail, as well as other species of concern.

To date, the Navy has expended significant resources to investigate and remediate this portion of Mare Island; however, in view of the fact that the Navy is tasked with accelerating transfer and reuse of the former shipyard, further enhancement of this area to promote ecological values must be considered a lower funding priority at this time. Consequently, this inquiry proposal is provided in an effort to identify an alternative means to complete full restoration of this valuable habitat.

e. **Budget Costs and Third Party Impacts.** The estimated cost of this project is $150,000 per acre, or a total of approximately $5,250,000. This total would include all costs for completing the scope work described in Tasks 1 through 4 of Section c.

f. **Applicant Qualifications.** The principal investigator for the proposed project is Dr. Greg Linder. Ms. Penny Wilson will serve as the project manager and point-of-contact. Dr. Linder is an applied ecologist and Ms. Wilson is a civil engineer with Tetra Tech EM Inc. Tetra Tech EM Inc. is a full service environmental and program management company and is the prime contractor for conducting Navy-funded environmental investigations in the Bay-Delta area. Dr. Linder has 12 years of experience specializing in ecological hazard and risk assessment, and ecological restoration. Ms. Wilson has six years of experience conducting and managing site investigations, including extensive work at Mare Island.

Tetra Tech EM Inc. will be assisted in this effort by Pacific Habitat Services. Pacific Habitat Services will participate in development of the restoration design, as well as project implementation.

g. **Monitoring and Data Evaluation.** During the first two years of the project, progress will be documented for the funding agency in monthly reports. Subsequently, annual reports will be provided which detail outcomes of the wetland restoration project.

h. **Local Support/Coordination with Other Programs/Compatibility with CALFED Objectives.** This inquiry is proposed with the support of EFA WEST and the regulatory agencies (U.S. Environmental Protection Agency, California Department of Toxic Substances Control, and the California Regional Water Quality Control Board) that are actively involved in completing the cleanup and transfer of the former shipyard at Mare Island. This wetland restoration is fully consistent with the CALFED mission, specifically goals to improve and increase aquatic and terrestrial habitats and ecological functions in the Bay-Delta system.

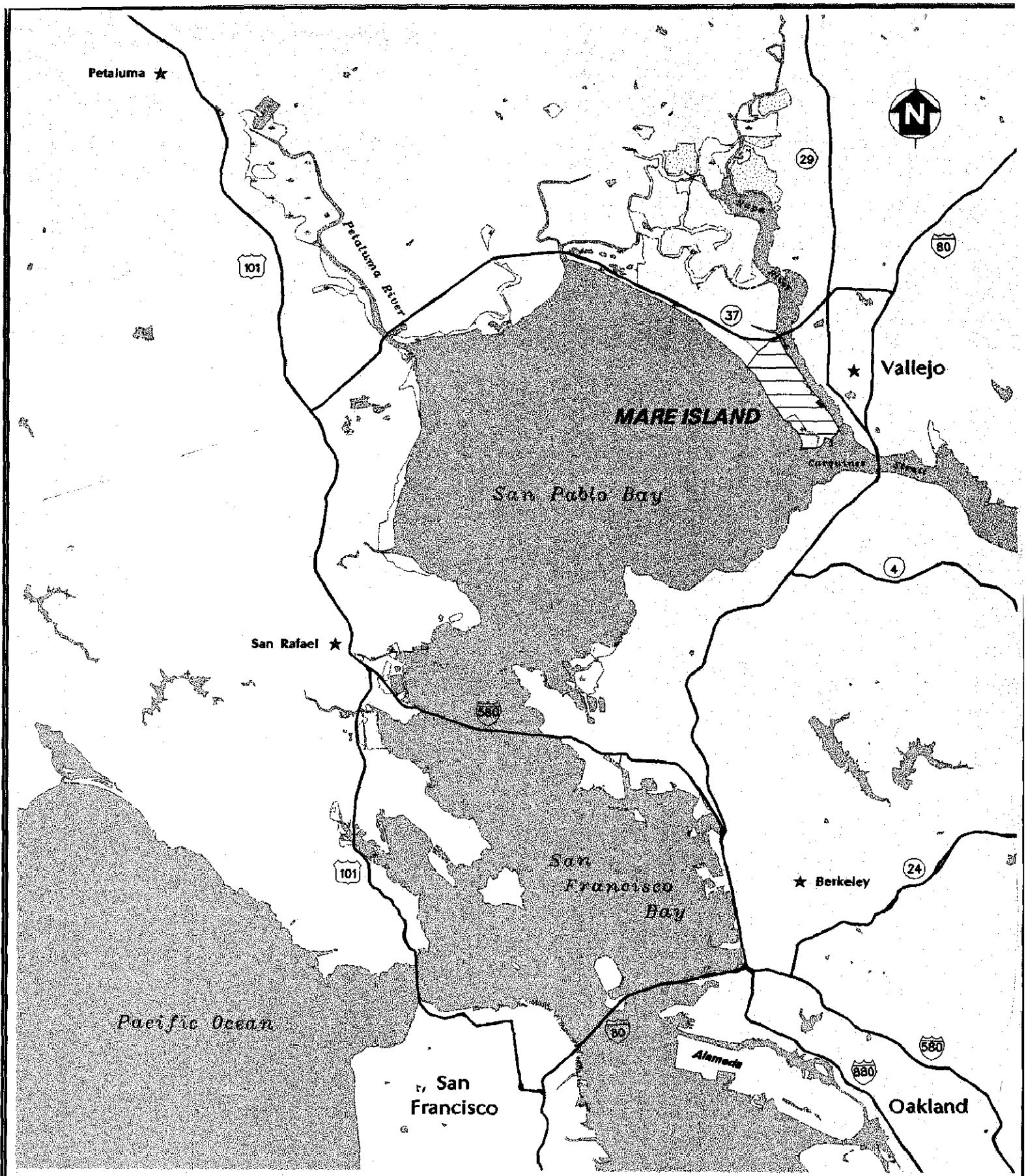

FIGURE 1

MARE ISLAND LOCATION MAP

MARE ISLAND, CALIFORNIA

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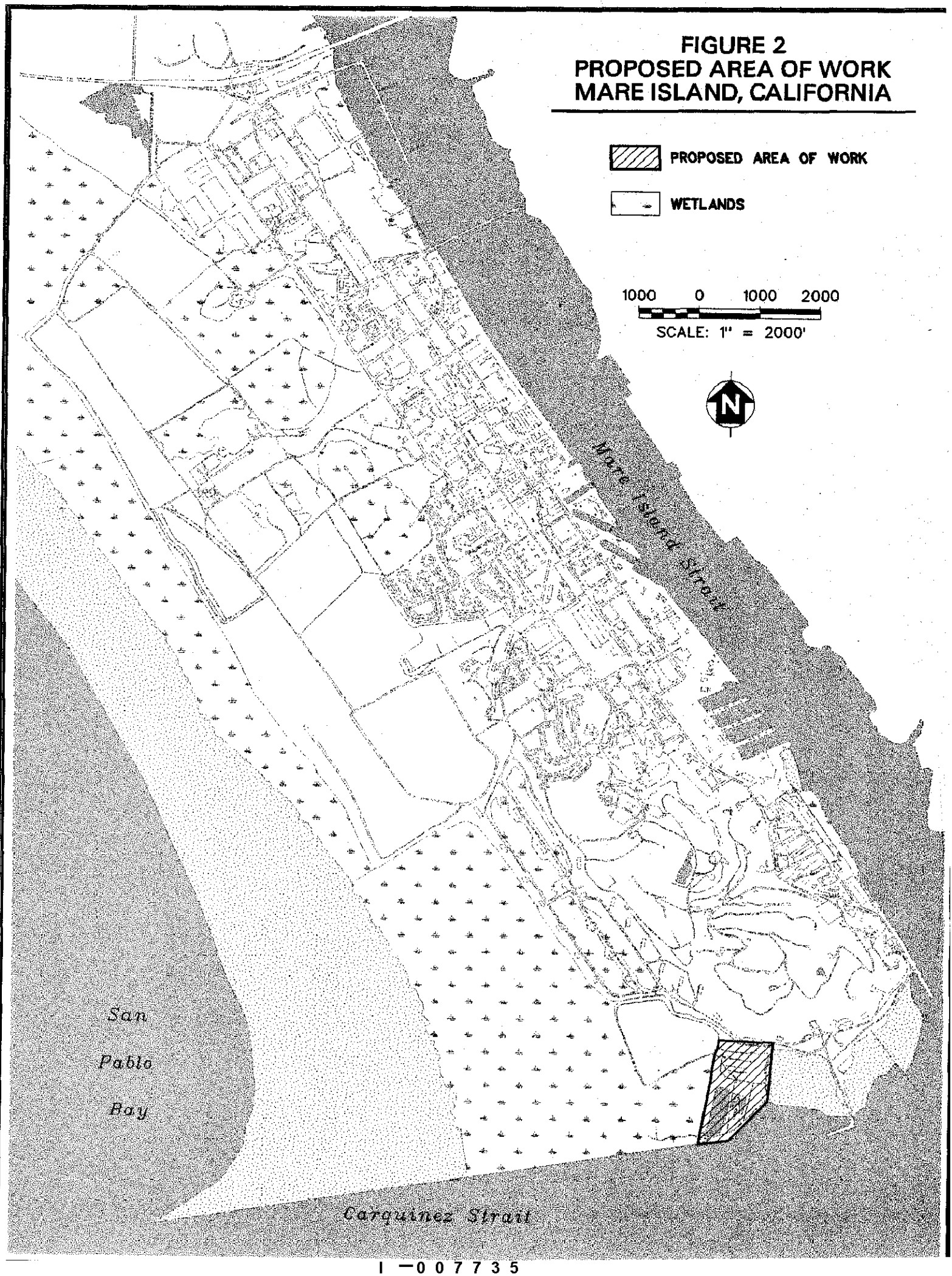
FIGURE 2
PROPOSED AREA OF WORK
MARE ISLAND, CALIFORNIA



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